

FIG. 1A

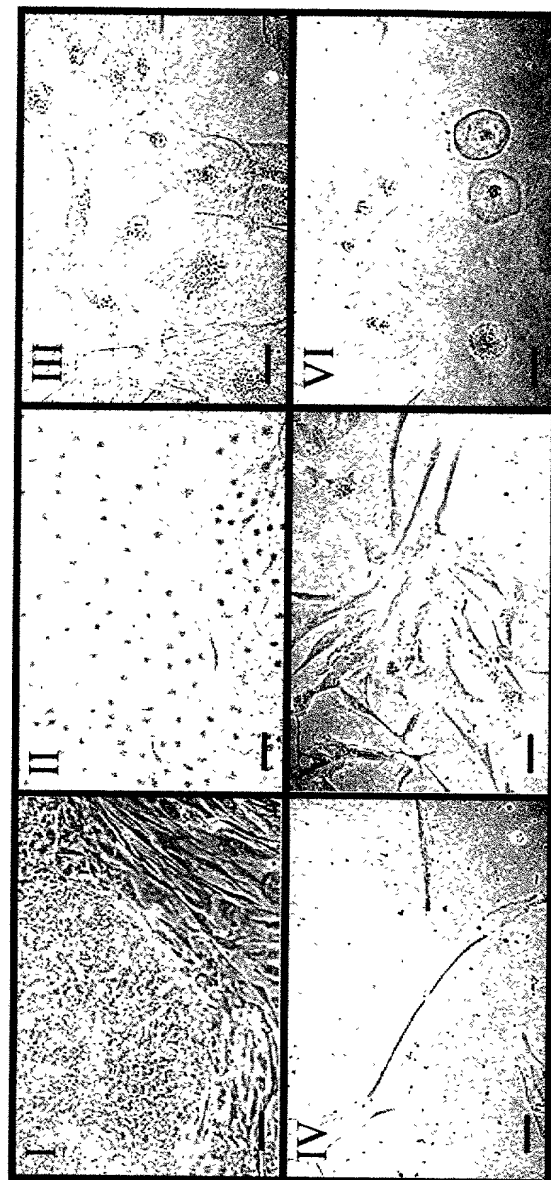


FIG. 1B

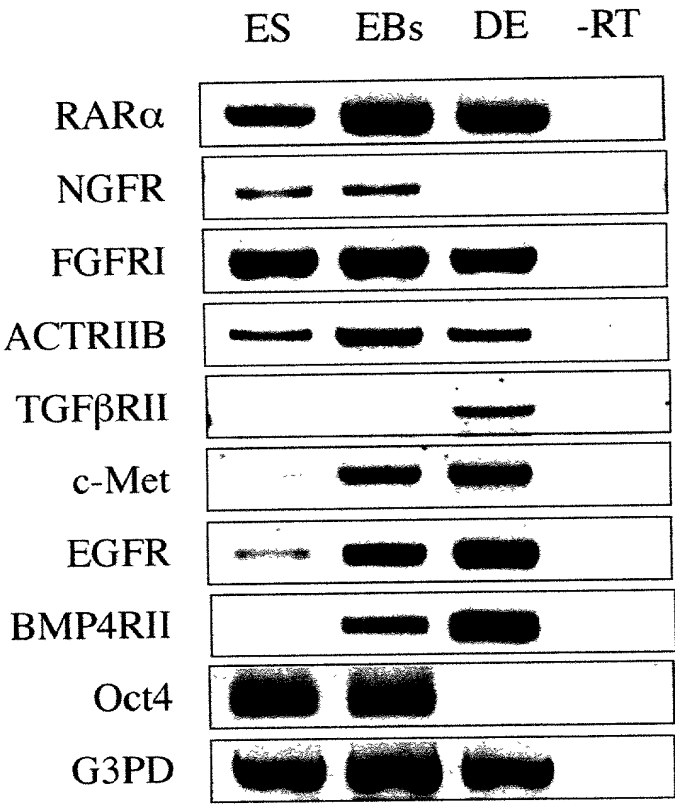


FIG. 2

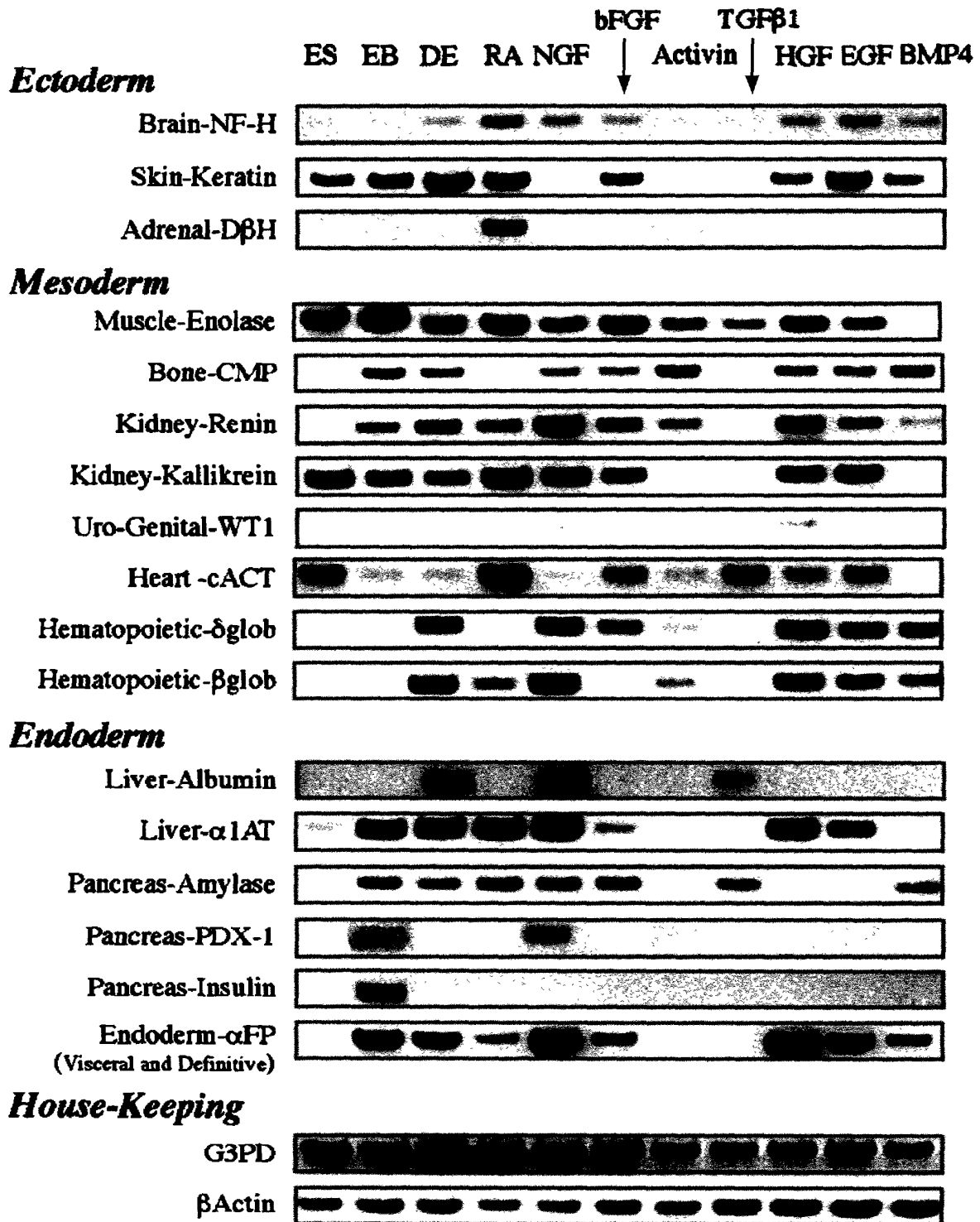


FIG. 3A

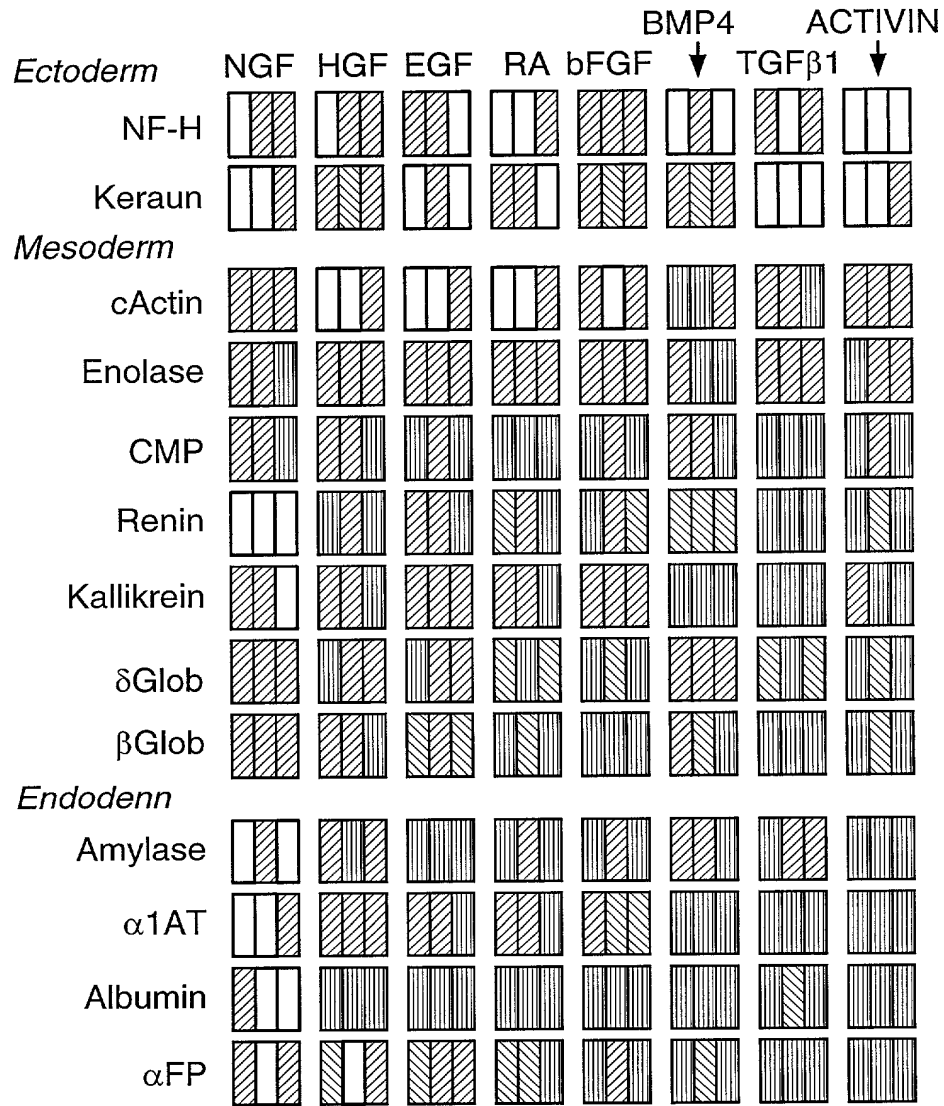
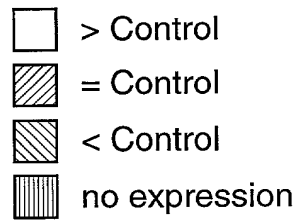
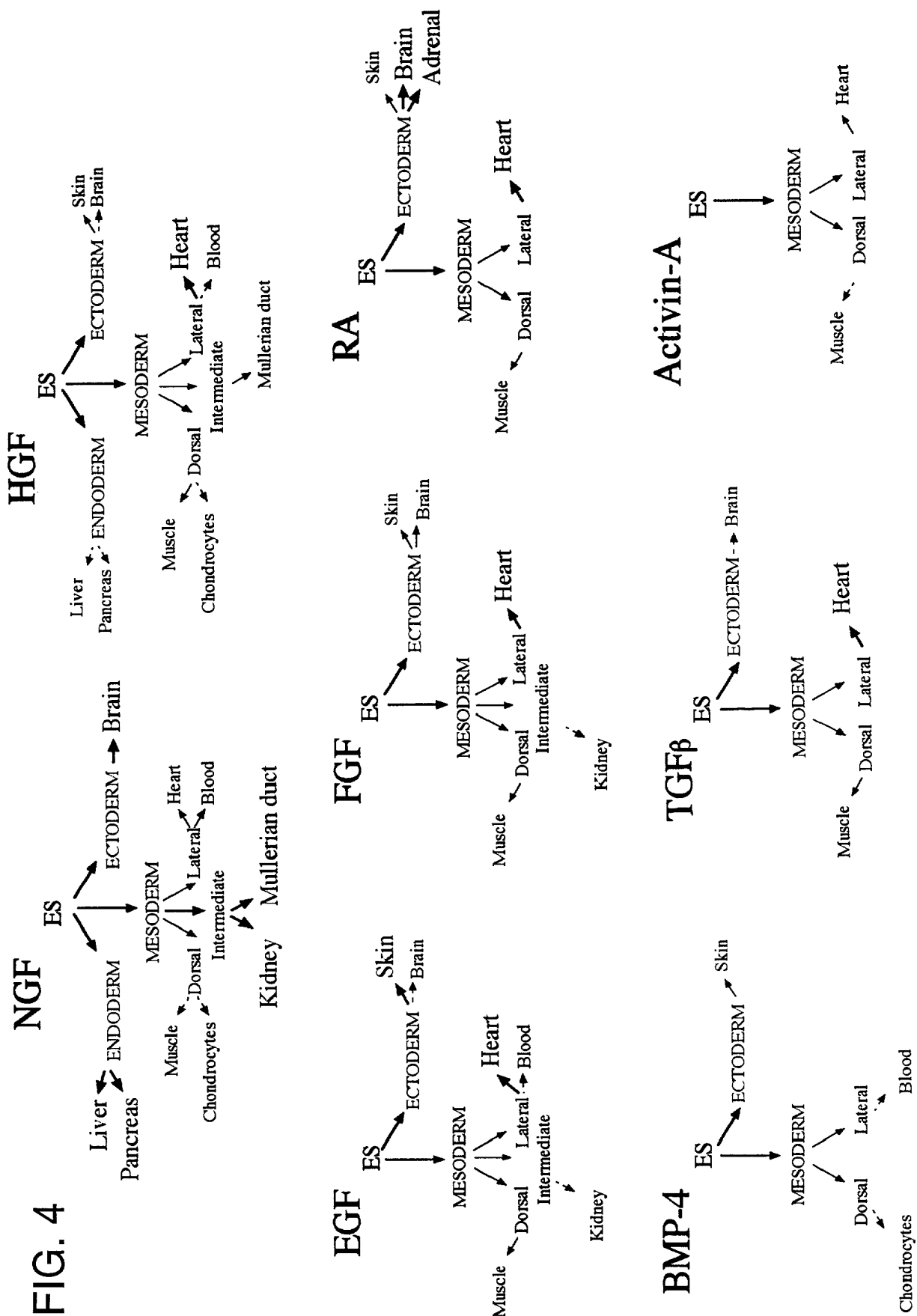


FIG. 3B



| Gene | Expected Product | 5' Primer | 3' Primer |
|---|------------------|-----------------------------|------------------------------|
| α -feto protein (α FP) | 680bp | AGAACCTGTCAACAAGCTGTG | CTGAGGATGTC |
| α 1 anti-trypsin (α 1AT) | 360bp | AGACCCCTTTGAAGTCAAGGACACCG | CCATTGCTGAAGACCTTAGTGATGC |
| Activin Receptor type IIB (ACTRIIB) | 550bp | ACACGGGAGTGTCATCTACTACAACG | TTCATGAGCTGGGCCCTTCCAGACAC |
| Albumin | 450bp | CCTTTGGCACAAATGAAGTGGGTAACC | andCAGCAGTCAGCCATTTACCCATAGG |
| Amylase | 490bp | GCTGGGCTCAGTATTTCCCAAATAC | GACGACAATCTCTGACCTGAGTAGC |
| B-Actin | 400bp | TGGCACCCACACCTTCTACAATGAGC | GCACAGCTTCTCCTTAATGTACGC |
| β -Globin (β -Glob) | 410bp | ACCTGACTCCTGAGGAGAAGTCTGC | TAGCCACACCAGCCACCACCTTTCTG |
| Bone Morphogenic Protein 4 Receptor type II (BMP4RII) | 800bp | TCTGCAGCTAGGTCTCTCATCAGC | TATACTGCTCCATATCGACCTCGGC |
| Cardiac Actin (cACT) | 630bp | TCTATGAGGGCTACGCTTTG | CCTGACTGGAAGGTAGATGG |
| Cartilage Matrix Protein (OMP) | 620bp | ATGACTGTGAGCAGGTGTGCATCAG | CTGGTTGATGGTCTTGAAGTCAGCC |
| δ -Globin (δ -Glob) | 430bp | ACCATGGTGCATCTGACTCCTGAGG | ACTTGTGAGCCCAAGGCATTAGCCAC |
| Dopamine β Hydroxylase (D β H) | 440bp | CACGTACTGGTGTACATTAAGGAGC | AATGGCCATCAGTGGCGGTACACC |
| Enolase | 490bp | TGACTTCAAGTCGCCTGATGATCCC | TGCGTCCAGCAAGATTGCCTTGTC |
| Epidermal Growth Factor Receptor type (EGFR) | 300bp | CAGTCGTCAGCCTGAACATAACATOC | AGGTTGCACCTTGTCCACGCATTCCC |
| Fibroblast Growth Factor Receptor type I (FGFRI) | 410bp | AGCATCATAATGGACTCTGTGGTGCC | AGTCCGATAGAGTTACCCGCCAAGC |
| Follicular Stimulating Hormone (FSH) | 320bp | GTGAGCTGACCAACATCACCATTGC | TTTCACCAAAGGAGCAGTAGCTGGG |
| Glucagon | 370bp | CTCAGTGATCCTGATCAGATGAACG | AGTCCCTGGCGGCAAGATTATCAAG |
| Glyceraldehyde 3-phosphate dehydrogenase (G3PD) | 890bp | TGAAGGTCGGAGTCAACGGATTGGT | CATGTGGGCCATGAGGTCCACCAC |
| Hepatocyte Growth Factor Receptor (c-Met) | 440bp | AGAAATTCATCAGGCTGTGAAGCGCG | TTCTCTCCGATCGCACACATTGTCTG |

FIG. 5A

| | |
|---------|---------|
| FIG. 5A | FIG. 5C |
| FIG. 5B | FIG. 5D |

FIG. 5

| | | | |
|--|-------|-----------------------------|-----------------------------|
| Insulin | 420bp | CTGCATCAGAAGAGGCCATCAAGC | GGCTTTATTCCATCTCTCTCGGTGC |
| Kalikrein | 480bp | GTTTCATGTCAGTGAGAGCTTCCCAC | TCACATAAGACAGCACTCTGACGGC |
| Keratin | 780bp | AGGAATCATCTCAGGAGGAAGGC | AAAGCACAGATCTTCGGAGCTACC |
| Lipase | 400bp | GATTTCATCAAGCATCAGTGGCTCC | CCAATCGGACTAATTCAGGTGTGCC |
| Myosin light polypeptide2 (myosin) | 400bp | TCCAACGTGTTCTCCATGTTCCAAC | CTTGAGTCCAAGTTGCCAGTCAAG |
| Nerve Growth Factor Receptor (NGFR) | 410bp | TGTTCTCTGCCAGGACAAGCAGAAC | TCTTGAAGGCTATGTAGGCCACAAGG |
| Neurofilament Heavy Chain (NFH) | 400bp | TGAACACAGACGCTATGCGCTCAG | CACCTTTATGTGAGTGGACACAGAG |
| Octamer Binding Protein 4 (Oct4) | 140bp | CGPGAAGCTGGAGAAGGAGAAGCTG | CAAGGGCCGCAGCTTACACATGTTT |
| Parathyroid Hormone (PTH) | 290bp | GGCTAAAGTTATGATTGTCATGTTGGC | TCAGCTTTGTCTGCTCTCTCCAAGAC |
| PDX-1 | 230bp | GGATGAAGTCTACCAAGCTCACGC | CCAGATCTTGATGTGTCTCTCGGCT |
| Phosphoprotein enriched in astrocytes(PEA-15) | 820bp | AGAGTGAGGAGATCACTACTGGCAG | ACCTGCTGGTACTCAGGAAACAGTC |
| Renin | 590bp | AGTCGTCTTTGACACTGGTTCTGTC | GGTAGAACCTGAGATGTAGGATGC |
| Retinoic Acid Receptor type alpha (RAR) | 500bp | AGCAGCAGTTCTGAAGAGATAGTGCC | GTGGAGAGTTCACTGAAC TTGTCCC |
| Surfactant | 460bp | TCCAGCTCATCTAGATGAGGAGCTC | GTCCCATGGCCCTAAATGCCCTCTCAG |
| Transforming Growth Factor Receptor type II (TGFRII) | 530bp | TAGTCACTGACAAACAACGGTGCAGTC | ACAGTGCTCGCTGAAC TCCATGAGC |
| WT1 | 450bp | TCCTTCATCAACAGGAGCCCGAGC | CTGTAGGGCGTCTCTCAGCAGCAAAAG |

FIG. 5B

| Gene | 5' Primer | 3' Primer |
|---|---------------|---------------|
| α -feto protein (α FP) | SEQ ID NO: 4 | SEQ ID NO: 5 |
| α 1 anti-trypsin (α 1AT) | SEQ ID NO: 6 | SEQ ID NO: 7 |
| Activin Receptor type IIB (ACTRIIB) | SEQ ID NO: 8 | SEQ ID NO: 9 |
| Albumin | SEQ ID NO: 10 | SEQ ID NO: 11 |
| Amylase | SEQ ID NO: 12 | SEQ ID NO: 13 |
| B-Actin | SEQ ID NO: 14 | SEQ ID NO: 15 |
| β -Globin (β -Glob) | SEQ ID NO: 16 | SEQ ID NO: 17 |
| Bone Morphogenic Protein 4 Receptor type II (BMP4RII) | SEQ ID NO: 18 | SEQ ID NO: 19 |
| Cardiac Actin (cACT) | SEQ ID NO: 20 | SEQ ID NO: 21 |
| Cartilage Matrix Protein (OMP) | SEQ ID NO: 22 | SEQ ID NO: 23 |
| δ -Globin (δ -Glob) | SEQ ID NO: 24 | SEQ ID NO: 25 |
| Dopamine β Hydroxylase (D β H) | SEQ ID NO: 26 | SEQ ID NO: 27 |
| Enolase | SEQ ID NO: 28 | SEQ ID NO: 29 |
| Epidermal Growth Factor Receptor type (EGFR) | SEQ ID NO: 30 | SEQ ID NO: 31 |
| Fibroblast Growth Factor Receptor type I (FGFRI) | SEQ ID NO: 32 | SEQ ID NO: 33 |
| Follicular Stimulating Hormone (FSH) | SEQ ID NO: 34 | SEQ ID NO: 35 |
| Glucagon | SEQ ID NO: 36 | SEQ ID NO: 37 |
| Glyceraldehyde 3-phosphate dehydrogenase (G3PD) | SEQ ID NO: 38 | SEQ ID NO: 39 |
| Hepatocyte Growth Factor Receptor (c-Met) | SEQ ID NO: 40 | SEQ ID NO: 41 |

FIG. 5C

| | | |
|--|---------------|---------------|
| Insulin | SEQ ID NO: 42 | SEQ ID NO: 43 |
| Kallikrein | SEQ ID NO: 44 | SEQ ID NO: 45 |
| Keratin | SEQ ID NO: 46 | SEQ ID NO: 47 |
| Lipase | SEQ ID NO: 48 | SEQ ID NO: 49 |
| Myosin light polypeptide2 (myosin) | SEQ ID NO: 50 | SEQ ID NO: 51 |
| Nerve Growth Factor Receptor (NGFR) | SEQ ID NO: 52 | SEQ ID NO: 53 |
| Neurofilament Heavy Chain (NFH) | SEQ ID NO: 54 | SEQ ID NO: 55 |
| Octamer Binding Protein 4 (Oct4) | SEQ ID NO: 56 | SEQ ID NO: 57 |
| Parathyroid Hormone (PTH) | SEQ ID NO: 58 | SEQ ID NO: 59 |
| PDX-1 | SEQ ID NO: 60 | SEQ ID NO: 61 |
| Phosphoprotein enriched in astrocytes(PEA-15) | SEQ ID NO: 62 | SEQ ID NO: 63 |
| Renin | SEQ ID NO: 64 | SEQ ID NO: 65 |
| Retinoic Acid Receptor type alpha (RAR) | SEQ ID NO: 66 | SEQ ID NO: 67 |
| Surfactant | SEQ ID NO: 68 | SEQ ID NO: 69 |
| Transforming Growth Factor Receptor type II (TGFRII) | SEQ ID NO: 70 | SEQ ID NO: 71 |
| WT1 | SEQ ID NO: 72 | SEQ ID NO: 73 |

FIG. 5D

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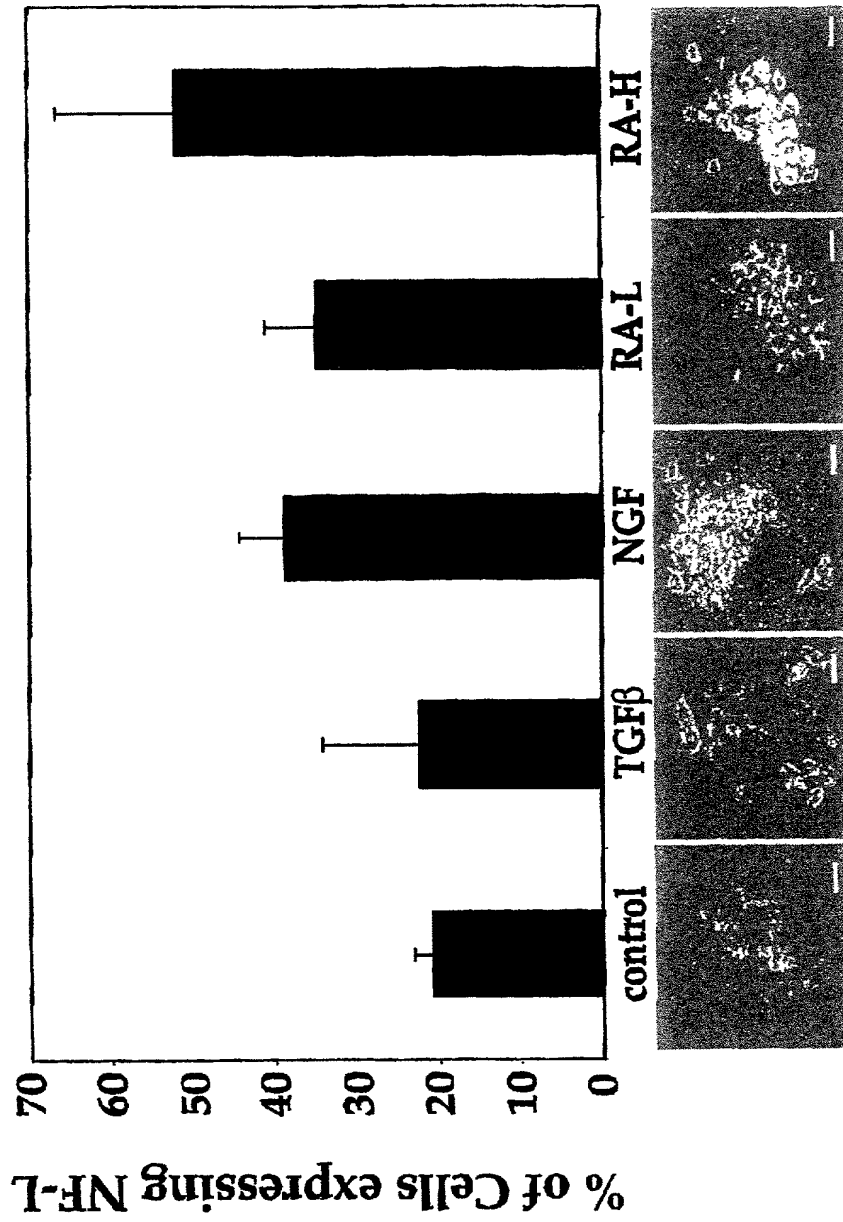


FIG. 6

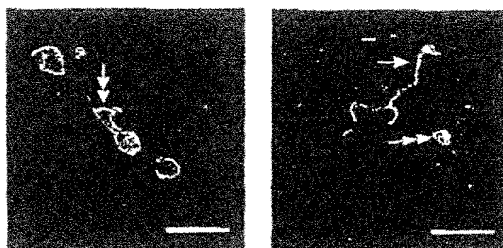


FIG. 7A

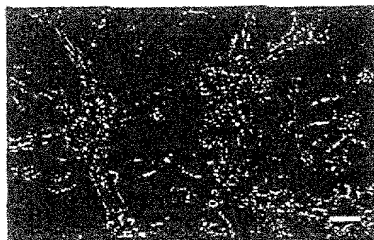
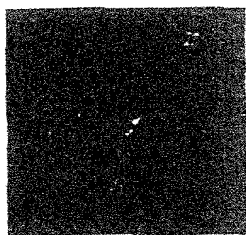


FIG. 7B

Low
Complexity



Medium
Complexity



High
Complexity



FIG. 7C

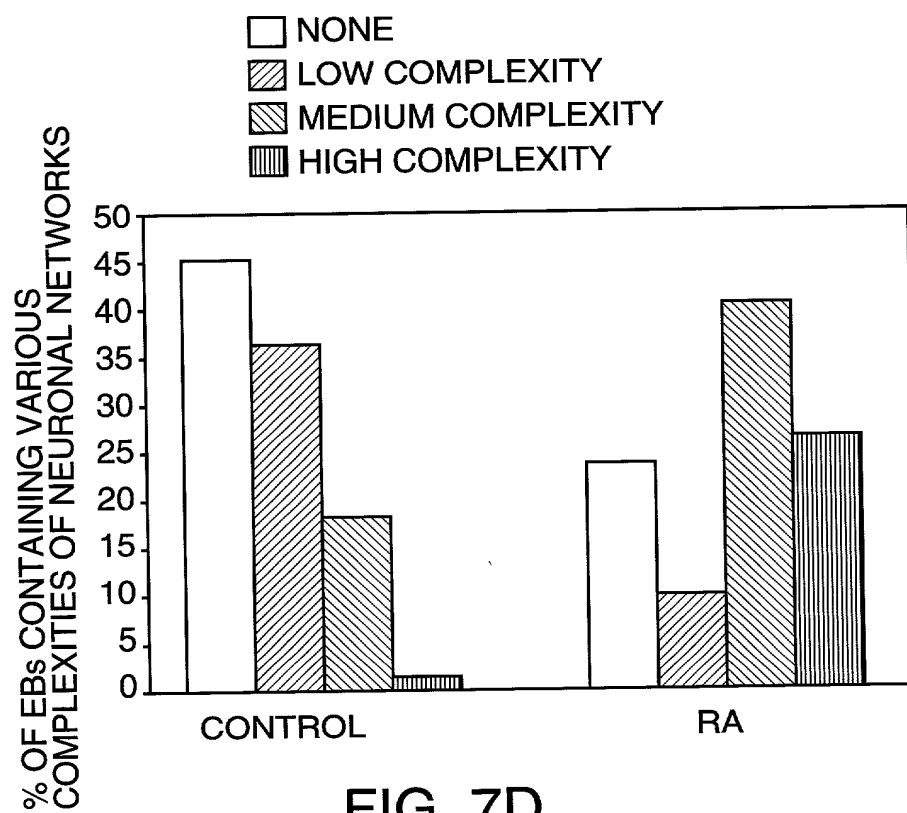


FIG. 7D

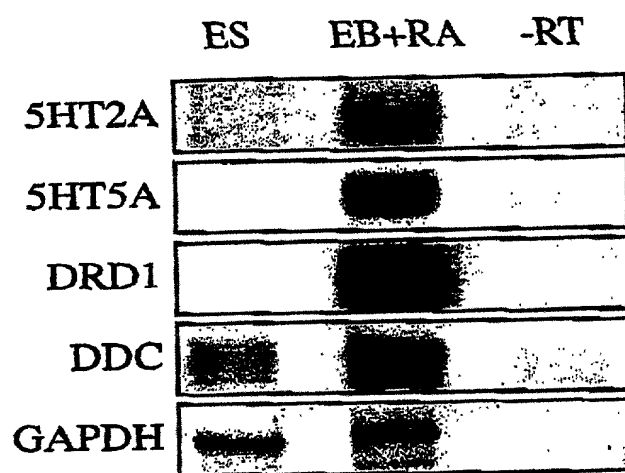


FIG. 8